LRSU Communications

Support for the AirLand Battle

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General U.S. Grant once said, "The art of war is simple enough. Find out where your enemy is. Get at him as soon as you can. Strike at him as hard as you can and as often as you can, and keep moving on."

The conduct and the results of Operation DESERT STORM echo those words, and that success can be attributed, in part, to the commanders' ability to receive, analyze, and rapidly react to human intelligence (HUMINT).

Long range surveillance units (LRSUs) are primary sources of HUMINT for a corps or division commander. Each corps has a dedicated LRSU company (Figure 1) and each division a dedicated detachment (Figure 2). The basic LRSU mission is to gather HUMINT in a corps or division area of interest (Figure 3) against second echelon and follow-on enemy forces.

The heart of LRSU operations — the six-man long-range surveillance teams (18 per corps company, six per heavy division detachment, four per light division detachment) — may operate from 50 to 350 kilometers forward of the FLOT (forward line of own troops). Real time or near-real time HUMINT is essential in complementing electronic, imagery, and other intelligence providing systems to enable a commander to make accurate, timely assessments and decisions. To achieve this goal, a LRSU must have a reliable and responsive communication system from the operational teams back to and through the LRSU base stations and into the corps or division tactical operations center (TOC) and the G-2.

The LRSU elements use special communication equipment to transmit and receive long range, secure burst transmissions. The LRSU teams are currently authorized the following primary communication equipment:

Digital Message Device Group (DMDG), OA-8990. This nine-pound portable, self-contained digital burst message device bursts messages up to 1,000 characters in length, using the standard typewriter keyboard with 32-character display, and stores them in the equipment. An integral modem permits connection to nearly all HF/VHF combat net radios.

AN/PRC-104B. This is a 20-watt, 14-pound manpack high frequency transceiver whose digital tuning permits upper sideband, lower sideband, continuous wave, or data mode operation on any of 280,000 channels.

Small Unit Radio (SUR), AN/PRC-126. The SUR is a small, lightweight (33-ounce), handheld transceiver designed for small unit leaders. It has 2,320 channels with a 10-channel preset. It has a range of 500 meters with a short antenna and 3,000 meters with a long antenna and is KYV-2A compatible for communication security (COMSEC). The SUR is used primarily by teams for assisting in making a passage of lines or to coordinate extractions.

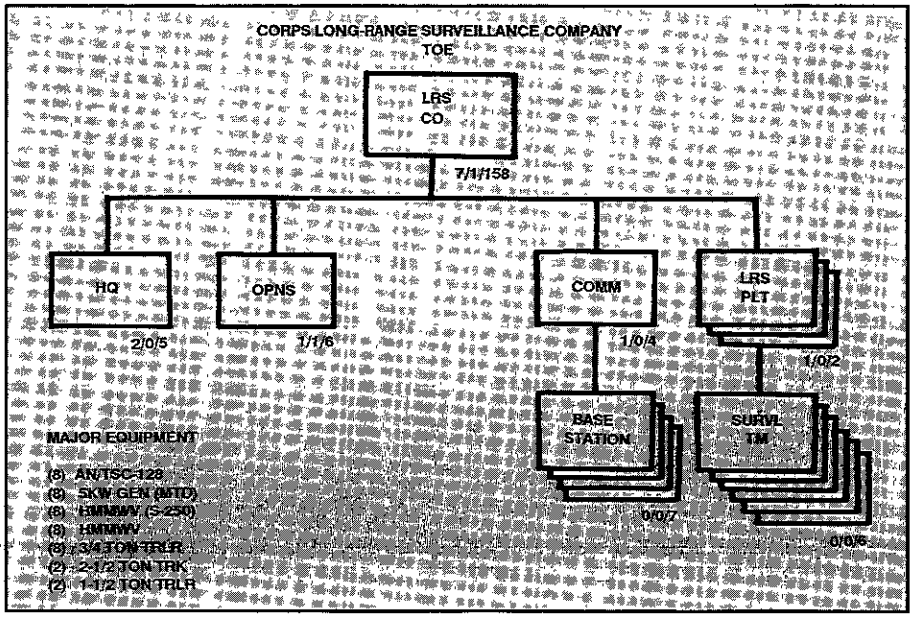

Figure 1

Antenna Group AN/GRA-50. This is a half-wave doublet assembly designed to increase the communication distances of HF radio sets. It has a frequency range from 1.5 to 30 megahertz (MHz) and weighs 11.75 pounds.

EYRING Low Profile Antenna, 302A. A rugged, lightweight (5-pound), rapidly deployable (on or near the ground), towerless, HF/VHF antenna, the 302A is a nondevelopmental, broadband, directional antenna that requires no tuning. It is well suited for man-portable CW/SSB (voice)/FSK (data) transceivers rated at up to 400 watts peak (200 watts average). (About 1,000 of these were employed during Operations DESERT SHIELD and DESERT STORM.)

Interim Long Range Surveillance Unit Base Radio Station (LRSUBRS), AN/TSC-128. Until April 1990, there was no standardized LRSUBRS in the Army. The units used "patchwork" systems that could not receive, process, and retransmit essential HUMINT information fast enough to allow corps and division commanders to use the information to its fullest extent.

During the first quarter of FY 1990, the Department of the Army authorized the Infantry School and the U.S. Army Communication Electronics Command (CECOM) to design and field an interim base station from existing equipment until an objective system could be developed through the normal acquisition cycle.

As a result of the fielding of mobile subscriber equipment, enough AN/GRC-122E and AN/GRC-142E shelters were identified to convert into AN/TSC-128 LRSUBRSs. CECOM then developed the engineering installation specifications and conversion kits with instructions for the gaining units. The gaining units would then perform the conversions, assisted by their local CECOM or AMC logistics assistance representative (LAR). The gaining unit and the major Army command would provide the required radio telephone/teleprinter (RATT) shelters and fund the conversion kits and installation costs.

In the third quarter of FY 1990, the Infantry School and the local CECOM LAR fabricated the first two AN/TSC-128 systems, followed by two more for the Infantry School's LRSU for training. During Operations DESERT SHIELD and DESERT STORM, a total of five LRSUBRSs (ten vehicles) were operational. It is anticipated that all LRSU elements will have their interim base stations converted by the fourth quarter of FY 1992, a total of 126 LRSUBRSs for the total force.

Primary communication equipment for the interim standardized base stations consists of a mixture of old and current systems. As new authorized equipment is fielded, it will be integrated into the base stations either as a one-

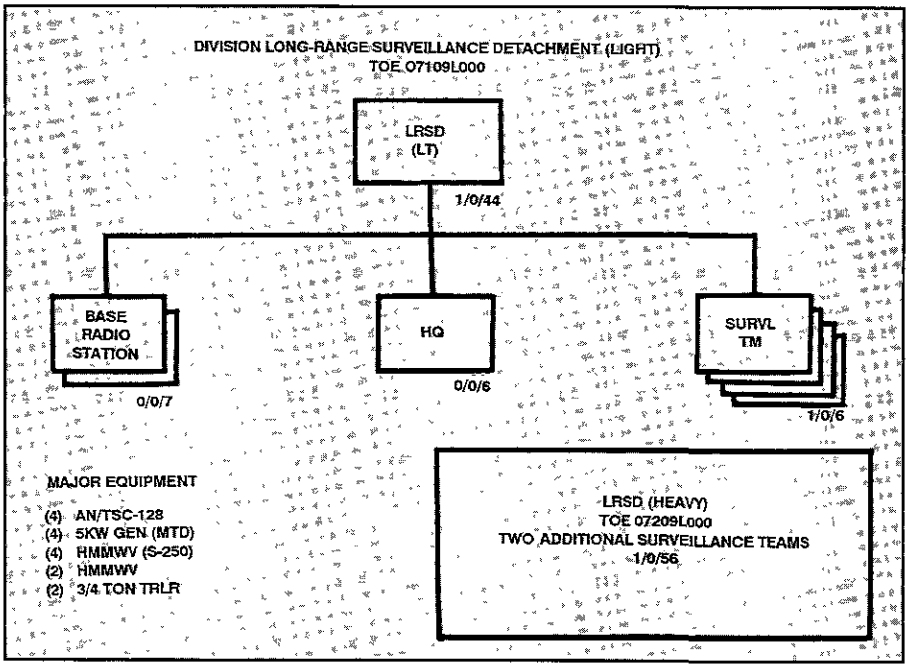

Figure 2

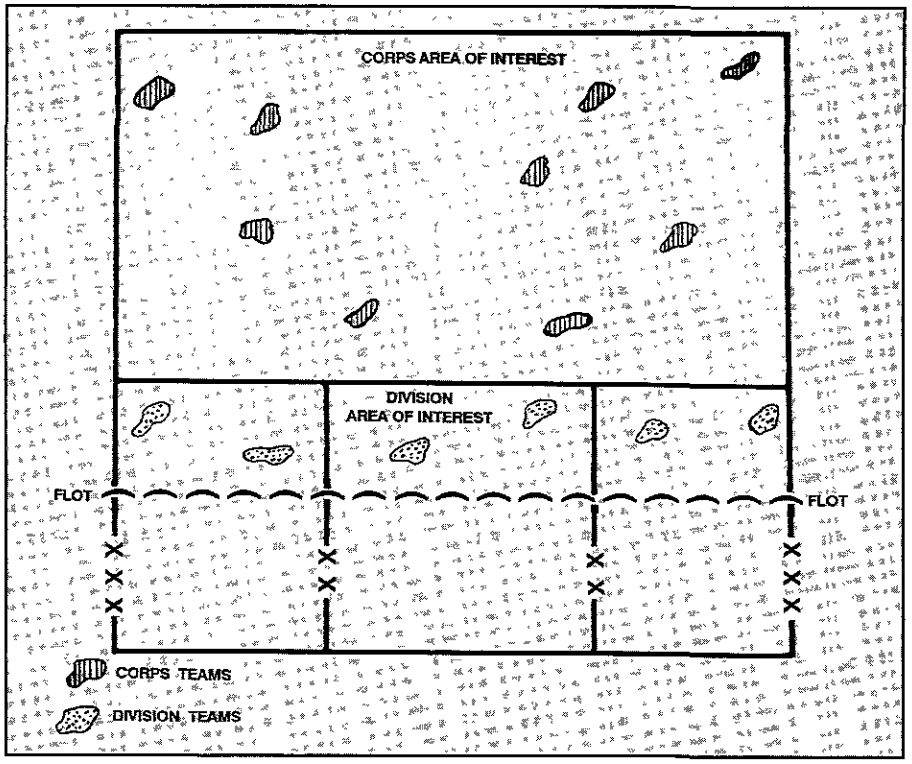

Figure 3

CURRENT	REPLACEMENT
Radio Set: AN/GRC-213 (6)	Objective High Frequency Radio
Radio Set: AN/GRC-193 (2)	Objective High Frequency Radio
DMDG, OA-8990 (8)	KL-43C and Objective
LRSUBRS	LRSUBRS
Lightweight Digital Facsimile AN/UXC-7 (2)	Objective LRSUBRS, TBD
Radio Set: AN/VRS-46/48 (2)	SINCGARS
Teletypewriter Set: AN/UGC-74 (2)	Objective LRSUBRS, TBD
COMSEC Device: TSEC/KY-57 (2)	Imbedded COMSEC
Charger Box: OA-8990 (2)	Objective LRSUBRS, TBD
Interface Assemblage for OA-8990-AN/UGC-74 (2)	Objective LRSUBRS, TBD

APPROVED ADD-ON EQUIPMENT AS FIELDED

- Mobile Subscriber Radiotelephone Terminal (MSRT) — AN/VRC-97 (2 per LRSUBRS)
- Digital Secure Voice Terminal (DSVT) TSEC/KY-68 (2 per LRSUBRS) — For use with MSRT
- Enhanced Manpack UHF Terminal (EMUT) TACSAT (1 per team, 6 per LRSUBRS)
- Data Transfer Device (DTD) AN/CYZ-10 (1 per team, 2 per LRSUBRS) — Replaces paper CEOI
- Special Operations Radio Antenna Kit (SORAK) (1 per team, 2 per LRSUBRS
- Special Operations Tactical Video System (SOTV) (1 per team, 2 per LRSUBRS)
- Joint Advanced Special Operations Radio System (JASORS)
  - Digital message entry device (1 per team)
  - Integrable Base Station (1 per 2 LRSUBRS at division, 1 per 3 LRSUBRS at corps)
  - Transit Case Base Station (1 per 2 LRSUBRS at division, 1 per 3 LRSUBRS at corps)
  - Intra-team Radio (2 per team)
  - Manpack Radio (1 per team)

Figure 4

for-one replacement for the old equipment, or as new, required add-on equipment. A LRSUBRS will have two AN/TSC-128s, each configured to transmit and receive. Its vehicle, typically a HMMWV (high mobility multipurpose wheeled vehicle) with trailer-mounted generator, is required to operate the system. (A list of RATT shelter component items to be retained, turned in, or installed is shown in the installation specifications provided by CECOM, and in the Logistic Support Plan Communications Central: AN/TSC-128, dated 1 October 1990.) The authorized communication equipment and the known replacements and add-on systems are shown in Figure 4.

The AN/TSC-128 is an interim design, a first step toward standardizing worldwide LRSUBRS. Future modifications as a result of lessons learned and any suggestions for improvement from the field are welcome and should be sent through proper channels to Signal Officer, Company D, 4th Ranger Training Battalion, ATTN: ATSH-RBD-D, Fort Benning, GA 31905-5400; or call DSN 784-6831/6216.

The need for and the importance of battlefield intelligence in military operations has been well documented for centuries. In this era of electronics, and with the ability to rapidly gather critical real time to near-real time intelligence using current and emerging electronic assets, a commander's decision making capabilities will be greatly improved.

Operations DESERT STORM and DESERT SHIELD proved that human intelligence, combined with state-of-the-art electronic equipment, gives a commander an all-weather, day-and-night intelligence gathering capability, and a processing and dissemination means of winning battles with few friendly casualties. Long range surveillance units, with the latest technology available to them, are the HUMINT sources that can and will extend the commander's view of the AirLand Battlefield.

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